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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/617,165

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Prashant G. Joshi

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EXAMINER

POULOS, SANDRA K

ART UNIT

PAPER NUMBER

1714

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/617,165

Applicant(s)

JOSHI ET AL.

Examiner

Sandra K. Poulos

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,6-9,14-17,22-25,30-38 and 42-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-9,14-17,22-25,30-38 and 42-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. All outstanding rejections and objections except for those described below are overcome by applicant's amendment filed 10/23/06.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/23/06 has been entered.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- Claims 1, 4, 6-9, 14-17, 22-24, 33-38, 42-43, 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, claims 1 and 42 recite (i) "wherein the total amount of silica is up to 110 phr" and claims 36 and 46 recite (ii) "the total amount of silica is above 100 phr." It is the examiner's position that these phrases fail to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the phrases (i) and (ii) in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found support for this phraseology in the specification as originally filed. While there is support for silica being present in discrete amounts of 80, 90, 95, 100, 105, and 110 phr in the examples, there is not support for "up to 110 phr" which includes the entire range of 0-110 phr which applicant does not have support for. See advisory action mailed 9/12/06.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4, 6-9, 14-17, 22-25, 30-38, 42-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "a hardness increasing amount " in claims 1, 25, 42, and 44 is a relative term which renders the claims indefinite. The term " a hardness increasing amount " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Attention is drawn to the specification, page 16,

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lines 5-7 wherein it is disclosed that for silica an increase of 1 to 100 phr, preferably 2 to 30 phr beyond the currently used levels is desired. Applicant discloses "preferred" and "desired" loading amounts but it is unknown whether these amounts correspond to the "hardness increasing amount" or if the components can give hardness to the composition outside of these preferred embodiments. See rejection in paragraph 4 of the Office Action mailed 12/19/05.

Claim 33 is rejected because while the composition can further include carbon black, it is improper to further include carbon black when the Markush group has been specified, since Markush groups are not open to other members than what is already recited.

Claim 42 recites an improper Markush group.

Claim 42 improperly recites a Markush group. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper (emphasis added). See MPEP § 2173.05(h). There is currently "or" recited within the Markush group.

The remaining claims are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

### ***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 1, 4, 6-9, 14-17, 22-24, 33-34, 36 42-43, 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Cruise (WO 99/09036).

The discussion with respect to Cruise in the Office Actions mailed 12/19/05 and 6/06/06 are incorporated herein by reference.

Cruise 'discloses a rubber composition with blocked mercaptosilanes (pg 3, lines 6-14), which are further described and examples are given on pages 3-10. The blocked mercaptosilanes are useful as coupling agents for rubbers and inorganic fillers (pg 21, lines 14-15). Suitable fillers include silica (pyrogenic and precipitated), siliceous materials including clays and talc, and carbon black (pg 28, lines 9-11). Particulate, precipitated silica is also sometimes used, particularly when the silica is used in connection with a silane (pg 28, lines 11-13). A combination of silica and carbon black is utilized for reinforcing fillers for various rubber products, including treads for tires (pg 28, lines 13-15). The vulcanized rubber composition should contain a sufficient amount of filler to contribute a reasonably high modulus and high resistance to tear (pg 28, line 24; pg 29, lines 1-2). Silica, such as precipitated silica, alumina and/or aluminosilicates together with reinforcing carbon black are used in the manufacture of rubber (pg 30, lines 11-21). The particulate filler (including silica and carbon black) is present in an amount of 5 to 100 (pg 26, lines 16-18).

Other additives such as tackifying resins, zinc oxide, etc. are commonly used in rubber compositions (pg 30, lines 22-24; pg 31, lines 1-6). The process of making the composition also comprises the additional steps of preparing an assembly of a tire or sulfur vulcanizable rubber with a tread comprised of the rubber composition (pg 26, line

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24; pg 27, lines 1-3). A specific example using octanoylthio-1-propyltriethoxysilane is disclosed in Example 9, page 41. Example 15 (E) discloses a tire formulation comprising 3-octanoylthio-1-propyltriethoxysilane with SSBR, BR, silica, carbon black, and zinc oxide (pg 48-49).

Cruise discloses the shore A hardness of the composition ranges from the upper 50's to the mid 60's which are typical of the composition hardness in applicant's specification. Thus, since Cruise has the same components and similar hardness values to applicant's composition, it is inherent that the components present have caused an increase in hardness similar to applicant's.

Thus Cruise anticipates the cited claims.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cruise in view of Sandstrom (US 5,341,843).

The discussion with respect to Cruise above is incorporated herein by reference.

While Cruise discloses various commonly used rubber compounding additive materials may be added in conventional amounts (pg 30-31), he does not explicitly disclose thermoplastic resins.

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Sandstrom discloses a pneumatic tire tread containing a diene rubber and low density polyethylene LDPE (abstract). The rubber contains conventional additives including silica, carbon black, etc (col 4 line 45 to col 5 line 8). The Shore A hardness ranges from the upper 50's to the mid 60's (Table 2).

It would have been obvious to one of ordinary skill in the art to incorporate LDPE as into the tire tread formulation as demonstrated by Sandstrom, because of enhanced resistance of the tire tread to cutting by broken glass or other road debris (col 4, lines 20-25) and increased abrasion resistance (col 4, lines 31-244).

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cruise in view of Kikuchi (JP 2000-319451).

The discussion with respect to Cruise above is incorporated herein by reference.

While Cruise discloses various commonly used rubber compounding additive materials may be added in conventional amounts (pg 30-31), he does not explicitly disclose thermosetting resins.

Kikuchi discloses a tire tread rubber containing a diene based rubber (para 8-10) containing reinforcing fillers such as silica, talc, etc to increase properties such as hardness (para 20, 24). Thermosetting resin is incorporated in an amount of 10 to 30 parts by weight.

It would have been obvious to one of ordinary skill in the art to incorporate thermosetting resin into the tire tread formulation as demonstrated by Kikuchi, because it raises the abrasion resistance.

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8. Claims 25, 30-32, 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cruise in view of Fitzgerald (US 5,623,028).

The discussion with respect to Cruise above is incorporated herein by reference.

While Cruise discloses various commonly used rubber compounding additive materials may be added in conventional amounts (pg 30-31), he does not explicitly disclose MQ resins.

Fitzgerald discloses a curable rubber composition with fumed silica, MQ resins, and preferably a silanol blocking agent (col 7-8; claim 4). The MQ resin has  $M=R^1_3SiO_{1/2}$  and  $Q=SiO_{4/2}$  further defined in column 8. Fitzgerald discloses additives such as alumina, mica, titanium dioxide and the like (col 11, lines 18-36). The Shore A hardness is up to the upper 50's to the low 60's (Table 4-5).

It would have been obvious to one of ordinary skill in the art to incorporate the MQ resin of Fitzgerald into the rubber composition of Cruise, because rubbers and articles of manufacture exhibited improved heat age properties.

### ***Response to Arguments***

9. Applicant argues that the change in formula from  $-G-(SiX_3)_3$  to  $-G-(SiX_3)_5$  is not new matter. This is not found persuasive for the reasons set forth in the advisory action mailed 9/12/06. However, since the amendment has presented the original  $-G-(SiX_3)_3$  along with the particular named species originally present in the specification, the new matter rejection has been withdrawn.

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The rejection regarding the combination of Cruise (WO 99/09036) and Patitsas (WO 99/22951) has been withdrawn in view of applicant's arguments that the Patistas reference is addressed to the crown portion of the tire, while Cruise is drawn to the tread portion.

Applicant's arguments regarding the Cruise reference are not persuasive. Cruise discloses silica in an amount of 80 phr, which anticipates the claimed amount "up to 110 phr" and also discloses quantities ranging from 5 to about 100, wherein "about 100" is sufficient to anticipate greater than 100 since "about 100" is in the vicinity, above or below, 100 phr.

### **Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Palombo (US 4,675,349) discloses use of HDPE in tire treads.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra K. Poulos whose telephone number is (571) 272-6428. The examiner can normally be reached on M-F 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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